UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Global Macroeconomics

2627-1-F5603M006

Learning objectives

The aim of this course is to introduce students to the workhorse models of modern dynamic macroeconomics. The course is divided in two parts. The first is focused on long-run growth while the second on short-run fluctuations. The two parts cannot be taken separately. Lectures will be complemented by seminars during which you will learn how to solve problem sets.

Learning outcomes:

1. Knowledge and understanding: Advanced understanding of modern dynamic macroeconomic models, growth theory and business cycles, including RBC and DSGE New-Keynesian frameworks.
2. Applying knowledge and understanding: Application of growth models and dynamic optimization to real-world and cross-country data using problem sets and model simulations. Application of models to analyze business cycles, simulate policy interventions using MATLAB, and interpret macroeconomic data related to fluctuations.
3. Making judgements: Ability to critically assess growth theories and interpret empirical findings to form autonomous evaluations on growth policies. Ability to critically assess different macroeconomic models, policy interventions, and their effectiveness in stabilizing business cycles, including during crises.
4. Communication skills: Ability to present clearly macroeconomic concepts, model outcomes, and policy implications in seminars and discussions.
5. Learning skills: Development of autonomous learning skills for advanced macroeconomic theory, policy analysis, and ability to follow and replicate academic research in macroeconomics, growth theory and business cycles.

Contents

"Growth Theory and Empirics: An International Perspective" teaches you macroeconomic models that help understand the causes of long-run economic growth and cross-country income differences. These include the

Solow growth model, the Neoclassical growth model, the overlapping generations model and theories of endogenous growth.

"Business Cycles in The Global Economy: Facts and Theory" teaches you the main characteristics of business cycles and the macroeconomic models that provide insights in understanding economic fluctuations. These include RBC models and New Keynesian DSGE models.

Detailed program

Part I - Growth Theory and Empirics: An International Perspective

1. Introduction: Basic facts about economic growth and cross-country income differences
2. The Solow growth model
3. Micro-foundations of macro-models and dynamic optimization
4. The Neoclassical growth model and applications
5. Growth with overlapping generations
6. Endogenous technological change
7. Economic growth in the global economy
8. Explaining cross-country income differences

Part II - Business Cycles in The Global Economy: Facts and Theory

1. Introduction: Basic facts about business cycles and economic fluctuations
2. The Real Business Cycle (RBC) model
3. Monetary policy in the Real Business Cycle model
4. The New-Keynesian (NK) model
5. Monetary policy in the NK model: rules versus discretion, unconventional monetary policy
6. Consumption under uncertainty and the consumption Capital Asset Pricing Model (CAPM)
7. Elements of international macroeconomics
8. Topics: inequality and heterogeneity in macroeconomics; the financial crisis and the pandemic

Prerequisites

Economics: Familiarity with an intermediate macroeconomics text such as Robert Barro,
Macroeconomics: A Modern Approach, 2008, 1st edition, Thomson South-Western; or N. Gregory Mankiw, Macroeconomics, Worth Publishers or any other intermediate undergraduate macroeconomic textbook.

Mathematics: Familiarity with calculus at the level of Alpha C. Chiang, Fundamental Methods of Mathematical Economics, McGraw Hill and basic differential equations. Dynamic optimization will be introduced during the course. A useful reference for some mathematical concepts is the textbook: Simon, C. & Blume, L. Mathematics for Economists.

Teaching methods

Lectures will be held in person and according to the rules the University will set for the a.y. 2026-27.
Lectures will be complemented by seminars during which the student will learn how to solve problem sets and

simulate models with Dynare/MATLAB.

Assessment methods

Assessment is based on a written exam and project work (optional).

Students are required to take a 75-minute written examination, structured in two parts. The first part consists of three short-answer questions aimed at evaluating the student's ability to apply course concepts to specific economic scenarios. Each question is worth 5 points. The second part is an analytical problem designed to assess the student's understanding of the formal models studied in class and their ability to adapt them to new contexts. The problem is divided into three questions, each worth 5 points.
Students who pass the written exam may request an oral examination; however, in this case, the written exam grade will be discarded. Given the quantitative nature of the course, the oral exam is recommended only in exceptional circumstances.
No midterm exams are scheduled. All assessments take place exclusively during the official examination sessions.

Students may also opt to complete a group project. This may take the form of a critical replication of an existing paper (using Dynare or Stata) or a critical review of recent contributions on a specific topic. Projects are presented and assessed at the end of the course. The presentation grade counts for 25% of the final mark, is valid for one year, and may be discarded upon request.

Textbooks and Reading Materials

Lecture notes will be made available. The main textbooks are:
Acemoglu, D. Introduction to Modern Growth, Princeton University Press, 2009
Galí, J., Monetary Policy, Inflation and the Business Cycle: An Introduction to the New Keynesian Framework, Princeton University Press, 2015
Romer, D. Advanced Macroeconomics, 5th edition, McGraw-Hill, 2019
For some topics, journal articles will be used.

Semester

II semester

Teaching language

English

Sustainable Development Goals

NO POVERTY | DECENT WORK AND ECONOMIC GROWTH | REDUCED INEQUALITIES